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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,506	09/08/2000	Hyeon-ho Son	3430-0134P	3076

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EXAMINER

CHUNG, DAVID Y

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 02/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/657,506

Applicant(s)

SON ET AL.

Examiner

David Y. Chung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1 and 4 rejected under 35 U.S.C. 102(e) as being anticipated by Kameyama et al. (U.S. 6,088,079).

As to claim 1, Kameyama discloses a liquid crystal device comprising a cholesteric liquid crystal layer disposed over the backlight. Note in figure 8, the light source 42, light conductive plate 4, reflector 41, and cholesteric liquid crystal layer 1.

As to claim 4, figure 8 of Kameyama shows a prism array layer 5 arranged between cholesteric liquid crystal layer 1 and the front surface of light conductive plate 4.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama et al. in further view of Li et al. (U.S. 5,691,789).

Kameyama teaches that the cholesteric liquid crystal layer exhibits circular dichroism by which natural light is separated into reflected light comprising circularly polarized light and transmitted light. Kameyama teaches that a single-layer or multi-layer structure can be used for the cholesteric liquid crystal layer. Kameyama does not explicitly teach a single cholesteric liquid crystal layer reflecting either left-handed or right-handed circularly polarized light.

Li discloses a single-layer reflective broadband circular polarizer that reflects either left-handed or right-handed circularly polarized light. Non-linear variation in the pitch of the cholesteric liquid crystal material creates a broadband polarizer having

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bandwidths approaching 2000 nm. Li teaches that the disclosed single-layer polarizers exhibit improved spectral and band-pass position characteristics. See column 2, lines 36 – 62. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the cholesteric liquid crystal polarizer of Li in the device of Kameyama because of its improved spectral and band-pass position characteristics.

3. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama et al. in further view of Faris et al. (U.S. 6,377,325).

Although Kameyama teaches that a multi-layer structure can be used, Kameyama does not explicitly teach a dual-layer cholesteric film in which one layer reflects left-handed circularly polarized light and the other reflects right-handed circularly polarized light.

Faris discloses a reflective film having symmetrical reflection characteristics, preferably made from cholesteric liquid crystal. Figure 2C shows a dual-layer reflective polarizer with one layer reflecting left-handed circularly polarized light and the other layer reflecting right-handed circularly polarized light. Faris teaches that the disclosed reflective films provide for improved whiteness and brightness uniformity under uniform lighting conditions. See column 7, lines 25 – 35. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the dual-layered reflective polarizers of Faris in the device of Kameyama because of the improved whiteness and brightness uniformity.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (703) 306-0155. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.

  
TOANTON  
PRIMARY EXAMINER

David Chung  
GAU 2871  
02/03/03